

**IN THE CLAIMS:**

The following listing of claims will replace all prior listings of claims in the application.

1. – 2. (Cancelled)

3. (Currently Amended): A method for assembling a plurality of packet fragments into a packet for transmission by network interface circuitry, the method comprising:

receiving a determining at the network interface circuitry that received data is a first packet fragment associated;

determining that the first packet fragment is associated with a first packet;

determining that the first packet fragment has a valid checksum;

storing the first packet fragment in a reserved buffer space in memory

corresponding to the first packet;

starting a timer to measure a time period;

sorting the packet fragments in the reserved buffer space based on a fragment number associated with each packet fragment; [[and]]

determining, at a predetermined time interval, whether any packet fragment associated with the first packet is missing; and

transmitting the first packet from the network interface circuitry over a network to a receiver.

4. (Previously Presented): The method, according to claim 3, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet.

5. (Previously Presented): The method, according to claim 3, wherein no packet fragments are missing at the end of the time period, and further comprising the steps of:

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry;

incrementing a counter of the network interface circuitry;  
checking for a connection table entry for the first packet;  
responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:  
generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,  
build the connection table entry, including the ART index,  
at least partially process the first packet, and  
send the first packet as processed to the network interface circuitry;  
forwarding the first packet from the network interface circuitry;  
clearing the buffer of the first packet responsive to forwarding the first packet;  
and  
decrementing the counter.

6. (Previously Presented): The method, according to claim 5, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

7. (Previously Presented): The method, according to claim 5, further comprising the step of generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

8. (Previously Presented): The method, according to claim 5, further comprising the step of setting a do not use flag for the connection table entry, wherein the packets subsequent to an initial received packet for a connection and to creation of the connection table entry are sent to the network interface software for processing responsive to the do not use flag being set.

9. (Previously Presented): The method, according to claim 5, wherein the first packet is completely processed by the network interface software.

10. (Previously Presented): The method, according to claim 5, further comprising the step of completing the processing of the first packet with the network interface circuitry.

11. (Currently Amended): A computer readable medium storing instructions for causing a network interface to assemble a plurality of packet fragments into a packet for transmission by a network interface, by performing the steps of:

receiving determining at the network interface that received data comprises a first packet fragment;

determining that the first packet fragment is associated with a first packet;

determining that the first packet fragment has a valid checksum;

storing the first packet fragment in a reserved buffer space in memory corresponding to the first packet;

starting a timer to measure a time period relative to the first packet;

sorting the packet fragments in the reserved buffer space based on a fragment number associated with each of the packet fragments; [[and]]

determining, at [[a]] the predetermined time interval, whether any packet fragment associated with the first packet is missing; and

transmitting the first packet from the network interface over a network to a receiver.

12. (Previously Presented): The computer readable medium, according to claim 11, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet.

13. (Previously Presented): The computer readable medium, according to claim 11, wherein no packet fragments are missing at the end of the time period, and further comprising the steps of:

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry; incrementing a counter of the network interface circuitry;

checking for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forwarding the first packet from the network interface circuitry;

clearing the buffer of the first packet responsive to forwarding the first packet;

and

decrementing the counter.

14. (Previously Presented): The computer readable medium, according to claim 13, further comprising the step of generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

15. (Previously Presented): The computer readable medium, according to claim 13, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

16. (Previously Presented): The computer readable medium, according to claim 13, further comprising the step of setting a do not use flag for the connection table entry, wherein the packets obtained after creation of the connection table entry are sent to the network interface software responsive to the do not use flag being set.

17. (Previously Presented): The computer readable medium, according to claim 13, wherein the first packet is completely processed by the network interface software.

18. – 22. (Canceled):

23. (Currently Amended): A system for assembling a plurality of packet fragments into a packet for transmission from a network interface, the system comprising:

a central processing unit;

a system memory coupled to the central processing unit; and

[[a]] the network interface coupled to the system memory and the central processing unit, the network interface configured to:

receive determining at the network interface that received data comprises  
a first packet fragment,

determining that the first packet fragment is associated with a first packet,

determine that the first packet fragment has a valid checksum,

store the first packet fragment in a reserved buffer space in a network  
interface local memory corresponding to the first packet,

start a timer to measure a time period relative to the first packet,

sort the packet fragments in the reserved buffer space based on a  
fragment number associated with each of the packet fragments, [[and]]

determine, at [[a]] the end of the predetermined time interval period,  
whether any packet fragment associated with the first packet is missing, and

transmitting the first packet from the network interface.

24. (Previously Presented): The system, according to claim 23, wherein at least one packet fragment is missing at the end of the time period, and the network interface further configured to clear the reserved buffer space corresponding to the first packet.

25. (Previously Presented): The system, according to claim 23, wherein no packet fragments are missing at the end of the time period, and the network interface further configured to:

combine each of the packet fragments in the reserved buffer space to generate the first packet;

buffer the first packet in the system memory accessible by network interface circuitry;

increment a counter of the network interface circuitry;

check for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, send the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forward the first packet from the network interface circuitry;

clear the buffer of the first packet responsive to forwarding the first packet; and  
decrement the counter.

26. (Previously Presented): The system, according to claim 25, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

27. (Previously Presented): The system, according to claim 25, wherein the network interface is further configured to generate a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.